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Resources

GEO 01 – Whatever Happened to?

You can download these activities as rich text files (RTF) using the links at the bottom of the page.

Subject Area	Geography
Suggested Level	7–8
Overview	In this unit the loss of biodiversity in Australia is studied with a variety of group activities for students. Each activity contributes to a large classroom display about the topic based on a timeline constructed from 1788 to the present day. The activities cater for a range of learning styles and variations in group size. Groups select different activities based upon their interest. Information has been drawn from ABS publication Measures of Australia's progress (cat.no.1370.0) and other ABS publications and should be supplemented with texts, atlases and the internet. Exploration of the topic begins with a class brainstorm before groups undertake their own learning tasks. The tasks cover the nature of faunal extinction on the Australian continent, examination of changes over time, noting in particular the role of population increase, vegetation clearance and introduced species. Students may investigate one or more endangered species, compare the conservation of land in Australia's states and territories and explore some of Australia's national parks. The information gained is shared through the classroom display, a

presentation from each group and completion of a crossword or game to integrate the learning undertaken.

Requirements

- Computer
- Internet Connection
- Spreadsheet software program
- Pens and paper
- Large maps of Australia suitable for a wall display
- Additional resources such as atlases and textbooks

Instructions

Clear a large space on the classroom wall. The creation of large maps of Australia suitable for display may be achieved by projecting an image of the country onto a wall space covered with a large sheet of paper. Alternatively, photocopy several large maps.

Activities

The table below outlines the theme and nature of each activity. Each activity is available for download at the end of this document.

Activity	Title	Theme	Comments
Whole Class Activity 1	What do we mean by environment?	Explore the nature of the environment	All students complete Brainstorming Mindmapping May be assessed for detail, organisations and correct classification, facility with mind mapping software
Group Activity 1	Is Australia an important biodiversity hotspot?	Explores endemic species and makes comparison with selected other countries	Graph and mapping 2 students
Group Activity 2	Which species have become extinct?	Explores mammalian extinction in Australia	Creation of timeline Research Digital imagery of species Caricatures of species 4 students
Group Activity 3	Which species are threatened?	Explores threatened species	Graph creation and analysis

			2 students
Group Activity 4	How has Australia's population grown?	Explores the growth of population from 1788 to present day	Timeline and graphing 3–4 students
Group Activity 5	Which species have been introduced?	Explores introduced animals	Research 3–6 students
Group Activity 6	Where has land been cleared in Australia?	Explores land clearance	Graph and mapping 6 students
Group Activity 7	Making a tree of life	Explores the importance of trees for biodiversity	Creative construction of material for display Research 4–6 students
Group Activity 8	How are we protecting biodiversity?	Explores conservation of land in Australia's states, territories and national parks	Mapping Research 4 students
Whole Class Activity 2	Class Presentations	Each group present their main finding to the class	
Extra Activities	Completion of crosswords and word search Creation of crosswords and game	Consolidation of learning	Individuals

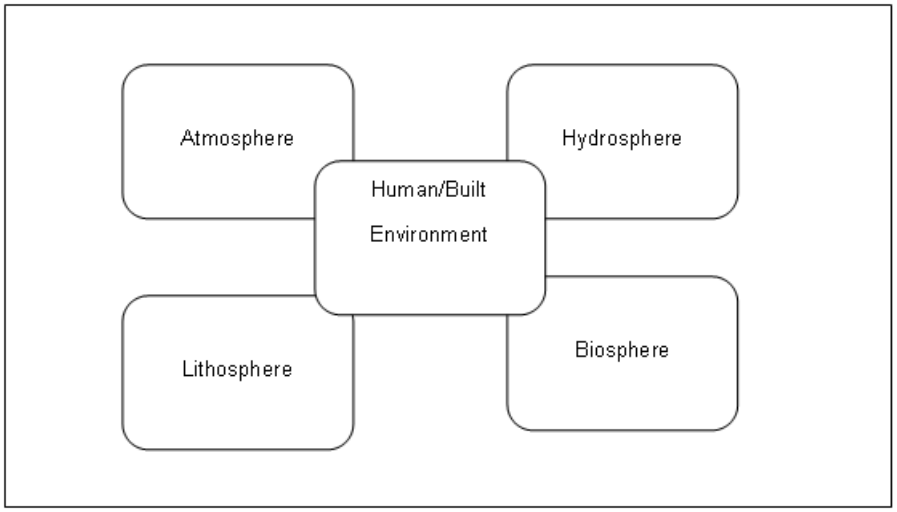
Whole Class Activity 1

Refer students to the student worksheet class activity 1. Ask the students to brainstorm what the word 'Environment' means to them. Students may present their responses on the worksheet or use a mind mapping tool.

Ask students to classify their ideas. The diagram (Figure 1) showing the four spheres and human interaction is provided as an example of an approach. The overlap between the human or built environment and the four spheres are points for discussion. Ask the students to annotate the diagram with appropriate images.

Note: Begin by developing the four natural spheres, before considering the interaction of people with the natural environment.

Environment: the aggregate of surrounding things, conditions, or influences (Macquarie Dictionary).



Answers

Group Activity 1

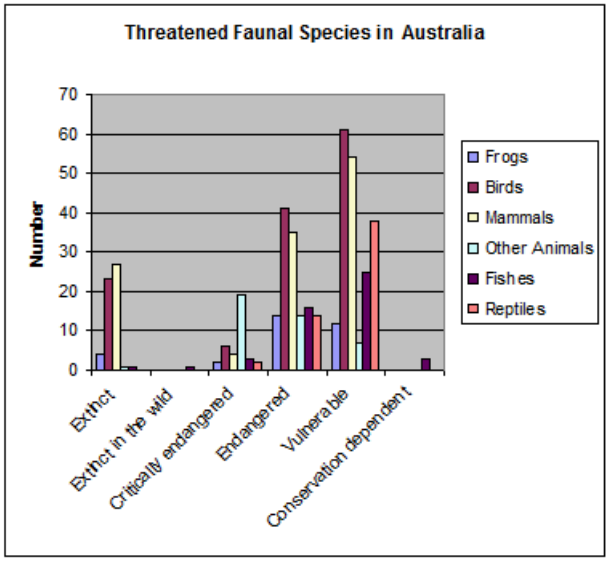
Mammals	Number species	Endemic species	% Endemic
Mammals	252	225	89
Birds	497	387	78
Reptiles	876	760	87

Source: World Resources Institute, EarthTrends available at http://earthtrends.wri.org/

Group Activity 3

	Term	**Definition**
Most severe	Extinct	There is no doubt that the last member of the species has died
	Extinct in the wild	Species is known to only survive in captivity or cultivation
	Critically endangered	Species is facing an extremely high risk of extinction in the wild in immediate future
	Conservation dependent	Species is the focus of a conservation program without which it would become vulnerable, endangered or critically endangered within 5 years
	Endangered	Species is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium -term future
Least severe	Vulnerable	Species is not critically endangered

Source: Department of Environment and Heritage, Threatened species and ecological communities in Australia, pamphlet sighted 12th April 2010

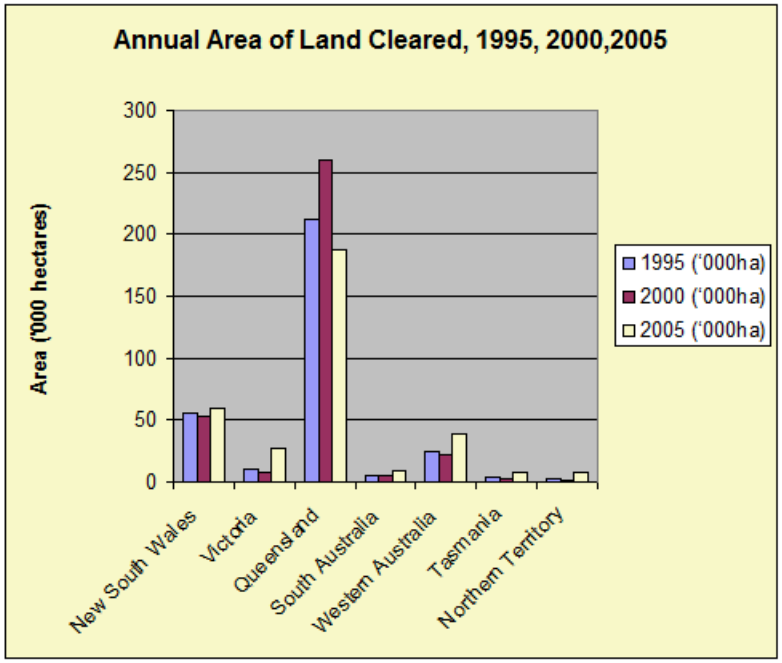


Group Activity 6

Table: annual area of land cleared (hectares), 2005

	2005 (ha)	2005 (Km^2)	Area of State and Territory (Km^2)	Area of Land Cleared as % of State or Territory
New South Wales	59 100	591	800 642	0.074
Victoria	27 400	274	227 416	0.120
Queensland	187 100	1871	1 730 648	0.108
South Australia	9 300	93	983 482	0.009
Western Australia	38 200	382	2 529 875	0.015
Tasmania	7 900	79	68 401	0.115
Northern Territory	7 900	79	1 349 129	0.006
Australia	333 600	3336	7 692 024	0.043

Source: Adapted from Measures of Australia's Progress: Summary Indicators, Table 7, 2009



Glossary

Biodiversity – (biological diversity) the existence of a huge variety of living things on earth – plants, animals and micro-organisms.

Endemic- found nowhere else on earth.

Deforestation- loss of forested areas

Extinct- There is no reasonable doubt that the last member of the species has died

Extinct in the wild- Species is known to survive only in captivity or cultivation

Critically endangered- Species is facing an extremely high risk of extinction in the wild in immediate future

Endangered- Species is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the near future

Infrastructure – the roads, railways, water supply, electricity, gas, phone networks and other capital equipment that supports a region.

Vulnerable- Species is not critically endangered

Conservation dependent - Species is the focus of a conservation program without which it would become vulnerable, endangered or critically endangered within 5 years

References

(Note: Links to ABS publications are to the most recent release. Previous releases can be accessed by selecting the 'Past & Future Releases' tab.)

Australian Historical Population Statistics Pub. No. 3105.0.65.001, http://www.abs.gov.au/ausstats/abs@.nsf/mf/3105.0.65.001

Department of Environment, Water, Heritage and the Arts, <http://www.environment.gov.au/>, last viewed June 2010

Department of Environment, Water, Heritage and the Arts, Protected Area Management Agencies in Australia and New Zealand, <http://www.environment.gov.au/parks/hoa.html>, last viewed June 2010

Department of Environment, Water, Heritage and the Arts, <http://www.environment.gov.au/biodiversity/invasive/index.html>, last viewed June 2010

Department of Environment, Water, Heritage and the Arts, <http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna>, last viewed June 2010.

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Measuring Australia's Progress, 2002, Mammalian Extinctions since 1788, Cat. No 1370.0, <http://www8.abs.gov.au/ausstats/abs@.nsf/2f762f95845417aeca25706c00834efa/9A0C82D0F59158DCCA256BDC0012240D?opendocument>, last viewed June 2010. (10 Based on information in Flannery, T. and Schouten, P. 2001, A Gap in Nature, Text Publishing, Melbourne; and data from the Committee for Recently Extinct Organisms, URL: www.crea.amnh.org last viewed 22 February 2002.

11 Strahan, R. 1995, The Mammals of Australia, Reed Books, Chatswood, NSW.)
Measures of Australia's Progress, 2006, http://www8.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/8CCED7939CA66EC6CA25717F0019014A?opendocument

World Resources Institute <http://earthtrends.wri.org/pdf_library/country_profiles/bio_cou_036.pdf> last viewed June 2010

Downloads

Class Activity

Geo_01ClassAct1.rtf
(RTF file, 661 KB)

Group Activities

Geo_01GroupAct 1.rtf
(RTF file, 719 KB)

Geo_01GroupAct2.rtf
(RTF file, 764 KB)

Geo_01GroupAct5.rtf
(RTF file, 927 KB)

Geo_01GroupAct6.rtf
(RTF file, 1,075 KB)

Geo_01GroupAct3.rtf
(RTF file, 715 KB)

Geo_01GroupAct7.rtf
(RTF file, 931 KB)

Geo_01GroupAct4.rtf
(RTF file, 731 KB)

Geo_01GroupAct8.rtf
(RTF file, 684 KB)

Revision Worksheets

Geo_01_revision1.rtf
(RTF file, 3.4 MB)

Geo_01_revision3.rtf
(RTF file, 673 KB)

Geo_01_revision2.rtf
(RTF file, 648 KB)

Geo_01_revision4.rtf
(RTF file, 623 KB)

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